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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/548,403

Applicant(s)

HANSEN ET AL.

Examiner

ALEXANDER D. KIM

Art Unit

1656

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/09/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-13 and 15-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-13 and 15-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Application Status

1. In response to the previous Office action, a non-Final rejection (mailed on 09/28/2010), Applicants filed a response and amendment received on 12/09/2010. In said amendment, claims 8 and 14 are cancelled, claim 1 is amended.

Claims 1-7, 9-13 and 15-17 are pending and will be examined herein.

Claim Interpretation

2. Claim 1 (Claims 2-7, 9-13 and 15-17 dependent therefrom) recites the limitation "a linear flow rate of at least 1,500 cm/hour" is broad to encompass a variety of flow rate depending on a column size (a cross sectional area of column, for example). In view of instant dependent claims 15 and 17 (which must be further limiting from their independent claim 1), the flow rate of claim 1 is broader to encompasses the flow rate of claims 15 and 17 (i.e., 50l/hour or 100 l/hour, respectively). Therefore, any flow rate represented by cm/hour or cm/min are obvious and/or anticipates each other unless column diameter is limited to a specific size in any patent application, US patent and/or reference(s) including instant application. The diameter of column is recited in instant claim 4; however, the term "about" makes the claim to encompasses broadly, that is smaller than 50 cm as well as larger than 200 cm, for example.

Applicants have explained how to calculate linear flow rate on page 7, Remarks filed on 12/9/2010; and argue that linear flow rate means "volumetric flow rate" divided by cross sectional area of the column; thus, the linear flow rate value is independent of

cross-sectional area of the column; and also argue that "The diameter of the column is removed from consideration (see page 6, lines 6-7, Remarks file don 12/9/2010).

The Examiner acknowledges the linear flow rate calculation by the applicants. The applicants have divided the linear flow rate of 1628 cm/hr by 3 or 2 according to the number of column in series which is not an accurate liner flow rate calculation. The liner flow rate is 1628 cm/hr regardless how long or how many column is attached since the liner flow rate passing through at any given cross section is same through out the column(s). For example, the columns in series can be considered as one long pipe wherein the velocity of moving fluid within the pipe remains constant as long as the cross section area remains the same regard less of total length of pipe (i.e., number of columns). If cross section area is smaller then, the liner flow rate increases accordingly to push out the same amount of water that is flowing into the pipe. If cross section area become larger at certain point within the pipe, then the linear flow rate of moving fluid will be smaller accordingly. Therefore, the number of columns, or height of column does not affect the flow rate. As applicants have acknowledges, that Lihme et al. had volumetric flow rate of 28,750 L/hour on a column having diameter of 1.5 meter. The liner flow rate has to be at least 1628 cm/hr at any given point of column in order to process 690,000 L whey per day (i.e., volumetric flow rate of 28750 L/hour) through 1.5 m diameter tube (or column). Furthermore, just because certain unit(s) cancels out in calculation and resulting another certain unit (cm/hr, for example), does not mean that a certain flow rate represented by different unit is not encompassed as noted earlier. It is unclear how the linear flow rate would be independent of cross-sectional area of the

column when said linear flow rate must be calculated by the value of cross sectional area (i.e., same as depending on the cross sectional area). Since the value of cross sectional area of EBA goes into the denominator, larger the value of cross sectional area results in lower linear flow rate and vice versa. Thus, instant claims are drawn to a method of requiring broad flow rate of "at least 1,500 cm/hour" with no limitation of in terms of cross section area of the column; thus, encompasses variety of volumetric flow rate which can be calculated by multiplying given linear flow rate (e.g., 1500 [cm/hour]) by various area with unit of [cm²]. As shown above, the different flow rates denoted in different units can be actually the identical flow rate as instant cases.

Applicants argue that interpretation based on instant claims 15 and 17 to support above interpretation is based on misunderstanding of claims 15 and 17 because they "do not recite a flow rate per se, rather they recite the volume of fluid applies per litre of adsorbent per hour" (see lines 4-6, page 8, Remarks filed on 12/9/2010).

It is unclear how any description having volume applied per hour is not perceived as something else other than flow rate. As written, the recitation of "in one hour" in claims 15 and 17 can not be ignored. Furthermore, the recited phrase "the volume applied" refers to the applied volume in claim 1 and there is only one step of applying a volume that is step c) of claim 1. Thus, claims 15 and 17 reads on a method as long as the step teach 50 liter sample/liter adsorbent/hr (or 50 liter sample/liter adsorbent/hr) which can be translated into many various flow rate given, circumstances and/or parameters within a condition of EBA performance. For example, if the same amount of volume in claim 15 is applied onto 2 litre of adsorbent, then the method of claim 15

actually would encompasses at least 25 liter sample/liter adsorbent/hr (i.e., calculated from 50 liter sample/2 liter adsorbent/hr). Furthermore, the volume of adsorbent can be changed given how EBA works. Because EBA adsorbent expands and contracts as the flow rate of running condition changes, in general; thus, per liter of adsorbent can mean actually having many different amount of absorbent depending on how dilute they are in solution at any given time. It is noted that recitation of "50 l" and "100 l" is clear in terms of the value of volume itself but broad enough to encompass many flow rate of volume, per hour, per litre of adsorbent in any condition. As long as the claim recites the time frame, it can be interpreted as rate which can be converted to have unit of "per liter of adsorbent" by dividing any given or any arbitrary volume of adsorbent used in any given EBA method.

Priority

3. Applicants noted that instant amendment reciting "at least 50 °C" is supported by the priority document "at page 2, lines 27 and 32; at page 4, lines 18 and 21; and at page 8, lines 13 and 16-17; thus the pending claims have an effective date of March 21, 2003, the filing date of Denmark PA 00443.

However, the page 4, lines 18 and 21 do not recites any temperature. Also, the page 2, lines 27 and 32; and at page 8, lines 13 and 16-17 provide support for the temperature range of "between 45 °C to 80 °C "; and "between 50 °C and 70 °C ", respectively, which are different from the scope of instant "at least 50 °C" (i.e., range of 50 °C to any higher temperature thereof). It is noted that instant limitation of " at least

50 °C" is not supported by the foreign priority (i.e., Denmark PA 2003 00443 filed on 3/21/2003). Thus, instant claims 1-7, 9-13 and 15-17 have priority date of 3/19/2004 which is filing date of PCT/DK04/00187.

Withdrawn-Claim Objections

4. The previous objection of Claims 1-7, 9-13 and 15-17 for Claim 1 (Claims 2-7, 9-13 and 15-17 dependent therefrom) reciting "process water from the food and/or feed industry" is withdrawn by virtue of applicants' amendment (i.e., reciting "water from the food and/or feed industry").

Maintained-Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The previous rejection of Claims 1-7, 9-13 and 15-17 under 35 U.S.C. 102(b) as being anticipated by Lihme et al. (WO 02/096215, published May 12, 2002; as cited in PTO 892 mailed on 9/23/2009) is maintained for reasons below.

Applicants argue that Lihme's flow rate of "1500-3000 cm/hr", for example, is a prophetic liner flow rate ranges and nearly silent in respect to temperature (see bottom of page 9, Remarks filed on 12/09/2010). Applicants further argue that 450 cm/hr by Lihme et al. do not meets the flow rate for reasons noted above regarding linear flow

rate calculation (see top of page 10, Remarks filed on 12/9/2010). Applicants argue that Lihme et al. likely used in the range of about 10°C according to the Table 1 (see page 11, Remarks filed on 12/09/2010) which summarized the method of Lihme et al., which non-of the fractionation experimentation meets the instant limitations.

Applicants' arguments have been fully considered but are not deemed persuasive for the following reasons. As noted above, regarding the calculation of liner flow rate, the Lihme's flow rate exceed the linear flow rate of 1500 cm/hr, in the Example 11 of Lihme et al. As noted previously and acknowledged in applicants' Table 1, the Example 11 also teach temperature of 50°C. The recited flow rate of "1500-3000 cm/hr" would be prophetic linear flow rate if said flow rate are not enabled by one skilled in the art. However, it is clearly enabled as Lihme et al. has demonstrated liner flow rate of 1628 cm/hr. Even if the flow rate range is not in the examples, it is noted that According to "MPEP 2136.02 [R-3] Content of the Prior Art Available Against the Claims. I. A 35 U.S.C. 102(e) REJECTION MAY RELY ON ANY PART OF THE PATENT OR APPLICATION PUBLICATION DIS-CLOSURE Under 35 U.S.C. 102(e), the entire disclosure of a U.S. patent, a U.S. patent application publication, or an international application publication having an earlier effective U.S. filing date (which will include certain international filing dates) can be relied on to reject the claims. Sun Studs, Inc. v. ATA Equip. Leasing, Inc., 872 F.2d 978, 983, 10 USPQ2d 1338, 1342 (Fed. Cir. 1989). See MPEP § 706.02(a)." wherein the only difference under 102(e) is the use of filing date instead of publication date of prior art.

As previously noted, Lihme et al. teach a general method for the fractionation of a protein-containing mixture wherein the protein-containing mixture is selected from the group consisting of milk, milk derived products, milk derived raw materials, vegetable derived products, vegetable derived extracts, fruit derived products, fruit derived extracts, fish derived products, and fish derived extracts, said method comprising the steps of: a) optionally adjusting the pH of the mixture; b) applying said mixture to an adsorption column comprising an adsorbent, said adsorbent comprises a particle with at least one high density non-porous core, surrounded by a porous material, the adsorbent having a particle density of at least 1.5 g/ml and a mean particle size of at most 150 μm ; c) optionally washing the column; d) eluting at least one protein from the adsorbent (see claim 1 or claim 25); wherein said method encompasses a flow-rate of about 5-50 cm/min (i.e., 300 to 3000 cm/hour; see claim 3); wherein said method encompasses species of method for purifying lactoferrin (LF) and lactoperoxidase (LP) protein from sweet whey having temperature of 50° C (see Example 11 on pages 36-37) in Expanded Bed Adsorption column (known as EBA). Thus, Lihme et al. teach a protein isolating method which meets the all limitations in instant **claims 1, 6, 7, 9, 13**. The purified LP and/or LF is shown in SDS-PAGE gel in figure 5 which shows Molecular weight is larger than 2 kDa (see Fig. 6 for relative size of protein compared to the standard); meeting the limitation of instant **claim 5**. Lihme et al. also teach a method of running an EBA column with diameter of 1.5 meter containing 265 liters of adsorbent can extract immunoglobulin from the whey with 690,000 liters per day (i.e., 28750 L/hour passing through at any given amount of adsorbent in column, 1 L of adsorbent,

for example; see top of page 45 in Example 11); in view of broad terminology "about", meeting the limitations of instant claims **2-4, 15 and 17**. Lihme et al. also teach that EBA adsorbent has mean particle size of 56 micron having density of 2.4 g/ml, for example, (see middle of page 47); meeting the limitation of instant claims **10-12 and 16**.

6. The previous rejection of Claims 1, 3-7 and 9-13 under 35 U.S.C. 102(b) as being anticipated by Flickinger et al. (US Patent 5,837,826; issued Nov. 17, 1998) as evidenced by Protein Marker Broad Range (last viewed on 9/22/2010).

Applicants argue that Flickinger et al. "provides a large prophetic range ... as high as 4000 cm/hour, can be obtained" (col. 8, lines 54-57)" (see page 12, bottom, Remarks field on 12/9/2010) and only discloses about 110 cm/hr or 220 cm/hr because there is practical "upper limit at a linear flow rate of 200 cm/hr ... Thus, one skilled artisan would reasonably conclude that Flickinger does not provide an enabling disclosure for flow rate above about 200 cm/hr" (see page 13, line 26-29, Remarks field on 12/9/2010). Applicants argue that majority of study is carried out at 4°C or room temperature; and 44.5° at most which failed to meet instant limitation of "at least 50°C" (see top of page 14, Remarks field on 12/9/2010).

Applicants' arguments have been fully considered but are not deemed persuasive for the following reasons. Applicants acknowledge that Flickinger et al. teach a method of EBA process involving "4000 cm/hour" (see bottom of page 13, Remarks field on 12/9/2010); and "preferably greater than about 50 °C, which is particularly advantageous for very viscous feedstocks that flow at elevated temperature"

(see bottom of page 13, Remarks field on 12/9/2010). As noted above, according to "MPEP 2136.02 [R-3] Content of the Prior Art Available Against the Claims. I. A 35 U.S.C. 102(e) REJECTION MAY RELY ON ANY PART OF THE PATENT OR APPLICATION PUBLICATION DIS-CLOSURE Under 35 U.S.C. 102(e), the entire disclosure of a U.S. patent, a U.S. patent application publication, or an international application publication having an earlier effective U.S. filing date (which will include certain international filing dates) can be relied on to reject the claims. Sun Studs, Inc. v. ATA Equip. Leasing, Inc., 872 F.2d 978, 983, 10 USPQ2d 1338, 1342 (Fed. Cir. 1989). See MPEP § 706.02(a)." wherein the only difference under 102(e) is the use of filing date instead of publication date of prior art. The method of Flickinger et al. would be hypothetical if the disclosure was not enabled; however, it has been determined that it is enabled at the time of instant invention as instant office action lacks scope of enablement rejection under 35 USC 112, first paragraph.

As noted previously and above, Flickinger et al. teach a method of EBA process involving "preferably greater than about 50 °C, which is particularly advantageous for very viscous feedstocks that flow at elevated temperature" (see column, 3, lines 32-36). Flickinger et al. teach a method of isolating BSA (66 kDa, see bottom of 1st page, Protein Marker Broad Range) by loading sample containing BSA sample to an expanded bed adsorption chromatography (EBAC) packed with xirconium oxide adsorbent and eluting said BSA including "elevating the loading temperature from 25°C to 45° C" (see top of column 28); results shown in Figure 11; and also teach the EBAC purification method can have "linear fluid velocities at least about ... as high as 4000

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cm/hour, can be obtained" (see column 8, line 57); meeting the limitation of instant claims **1, 5, 6, 9 and 13**. Flickinger et al. teach the mean particle size is within a range of about 30-400 μm (see second paragraph of column 7); meeting the limitations of instant claims **10-11 and 16**. Flickinger et al. teach the density of absorbent is about 2.5-3.5 g/cm^3 (1 ml of liquid has a volume of 1 cm^3), see column 7, line 35; meeting the limitation of instant claim **12**. Flickinger et al. teach the column size of 2.5 x 15 cm for the expanded bed column thus, containing a certain amount of absorbent (see column 19, line 13); in view of broad and reasonable interpretation of the term "about", meets the limitations of instant claims **3-4**. The BSA is immunogenic to certain animal and globular shape in nature; thus, the method of Flickinger et al. meets the limitation of instant claim **7**.

Withdrawn-Claim Rejections - 35 USC § 103

7. The previous rejection of Claim 5 under 35 U.S.C. 103(a) as being unpatentable Flickinger et al. (US Patent 5,837,826; issued Nov. 17, 1998) as evidenced by Protein Marker Broad Range (last viewed on 9/22/2010) in view of Lihme et al. (WO 02/096215, published May 12, 2002; as cited in PTO 892 mailed on 9/23/2009) and/or Olander et al., (Scandinavian Dairy Information, 2001, no. 2., pp. 22-25; as cited in PTO 892 mailed on 9/23/2009) is withdrawn by further consideration by the Examiner (all pending claims are rejected by Lihme et al. as noted above).

Maintained-Double Patenting

8. The previous rejection of Claims 1-7, 9-13 and 15-17 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over allowed claims 1, 3-5, 7-16, 19-23 and 27-33 of U.S. Patent application 10/478,111 (now U.S. Patent No. 7812138) in view of Lihme et al. (WO 02/096215, published May 12, 2002; as cited in PTO 892 mailed on 9/23/2009) and/or Olander et al., (Scandinavian Dairy Information, 2001, no. 2., pp. 22-25; as cited in PTO 892 mailed on 9/23/2009) is maintained for reasons stated herein.

Applicants argue that instant double patenting rejection is based on misinterpretation of "a linear flow rate of at least 1,500 cm/hour" which is corrected above. Applicants argue that the copending application 10/478,111 (now U.S. Patent No. 7812138) do not recites or conveys a linear flow rate of at least 1,500 cm/hour and a temperature of at least 50°C (see bottom of page 19, Remarks filed on 12/9/2010).

Applicants' arguments have been fully considered but are not deemed persuasive for the following reasons. Contrary to applicants' argument, as noted previously and emphasized again below, the instant rejection anticipates the instant limitation of a linear flow rate of at least 1,500 cm/hour and a temperature of at least 50°C.

Claims 1, 3-5, 7-16, 19-23 and 27-33 of U.S. Patent application 10/478,111 encompasses a method for the fractionation of a protein by applying a protein containing mixture from a milk, milk derived products...fish derived extract as recited in claim 1 and eluting a protein from the adsorbent of expanded bed adsorption (EBA) column (see claims 10 and 23, of U.S. Patent application 10/478,111, for example) with

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"a flow-rate of at least 5cm/min" (i.e., at least 300 cm/hour). Claim of 21 is drawn to said purification method wherein at least one isolated protein mixture comprises at least 70% w/w purity which is represented by obvious species of a method step which comprises running an EBA column as disclosed in Example 11 fractionating LP protein to 70% purity from the whey protein sample having temperature of 50° C (see Table on top of page 37), wherein mean particle size is 40 to 150 µm. All the other limitations which anticipates or obvious is disclosed in the specification of U.S. Patent application 10/478,111 or obvious for one skill in the art. According to MPEP 2144.05.II, "[g]enerally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical". For example, Lihme et al. (WO 02/096215) and Olander et al. teach an industrial scale EBA column having 265 liters of adsorbent and having a diameter of 1.5 meter (i.e., 1500 cm), see bottom of left column, page 25; and teach using EBA column with 690000 litre per 24 hours (i.e., 28750 l/hour which is 1628 cm/hr as noted above; see left column, bottom, page 25); as well as all the limitations recited in instant claims as noted above. Thus, instant claims 1-7, 9-13 and 15-17 are obvious over allowed claims 1, 3-5, 7-16, 19-23 and 27-33 of U.S. Patent application 10/478,111.

9. The previous rejection of Claims 1-7, 9-13 and 15-17 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-23, 26-28 of U.S. Patent No. 7,368,141; claims 18-31 of U.S. Patent No. 6,783,962;

claims 1-15 of U.S. Patent No. 6,498,236; or claims 1-6 of U.S. Patent No. 6,620,326 in view of Lihme et al. (WO 02/096215, published May 12, 2002; as cited in PTO 892 mailed on 9/23/2009) and/or Olander et al., (Scandinavian Dairy Information, 2001, no. 2., pp. 22-25; as cited in PTO 892 mailed on 9/23/2009); is maintained for reasons set forth herein.

Applicants argue that instant double patenting rejection is based on misinterpretation of "a linear flow rate of at least 1,500 cm/hour" which is corrected above. Applicants argue that the copending application 10/478,111 (now U.S. Patent No. 7812138) do not recites or conveys a linear flow rate of at least 1,500 cm/hour and a temperature of at least 50°C (see bottom of page 19, Remarks filed on 12/9/2010).

Applicants' arguments have been fully considered but are not deemed persuasive for the following reasons. Contrary to applicants' argument, as noted previously and emphasized again below, the instant rejection anticipates the instant limitation of a linear flow rate of at least 1,500 cm/hour and a temperature of at least 50°C in view of Lihme et al. (WO 02/096215, published May 12, 2002; as cited in PTO 892 mailed on 9/23/2009) and/or Olander et al., (Scandinavian Dairy Information, 2001, no. 2., pp. 22-25; as cited in PTO 892 mailed on 9/23/2009).

As similarly noted in above nonstatutory obviousness-type double patenting rejection, claims in US patents above are drawn to a method of isolating protein(s) using expanded bed adsorption chromatography which anticipates and/or obvious in view of teachings of Lihme et al. (WO 02/096215, published May 12, 2002; as cited in PTO 892 mailed on 9/23/2009) and/or Olander et al. for all the same reasons stated above.

Conclusion

10. Claims 1-7, 9-13 and 15-17 are not allowed for the reasons identified in the numbered sections of this Office action. Applicants must respond to the objections/rejections in each of the numbered section in this Office action to be fully responsive in prosecution.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER D. KIM whose telephone number is (571)272-5266. The examiner can normally be reached on 9AM-5:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manjunath Rao can be reached on (571) 272-0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alexander D Kim/
Examiner, Art Unit 1656